Grade 1

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SKILL SHARPENERS

STEAM

Grade 1

Connecting School and Home

Downloadable Teaching Guide

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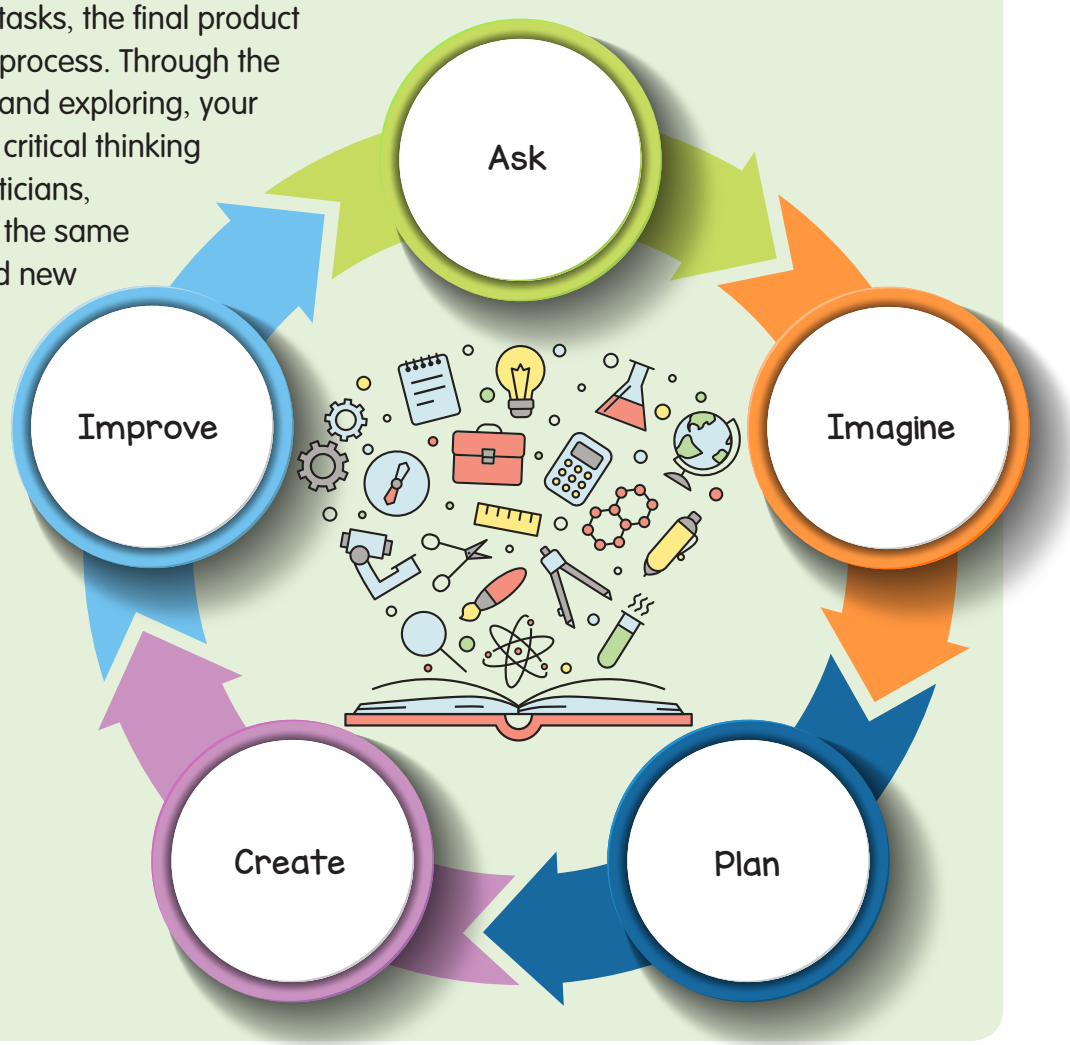
How to Use This Guide

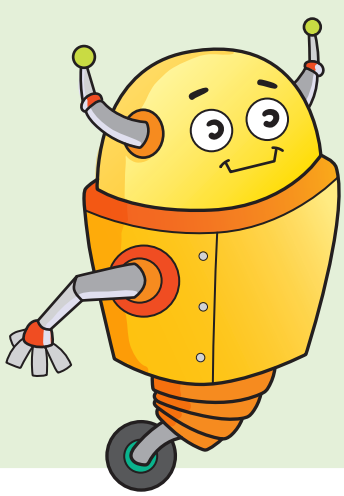
This guide provides suggestions and support to help you use *Skill Sharpeners: STEAM* as part of your core curriculum. The information and practice in *Skill Sharpeners: STEAM* introduce students to real-world problems in relatable contexts. The activities and projects focus on Science, Technology, Engineering, Art, and Math and provide hands-on experiences as well as connections to real-world scenarios and careers. The discussion questions and field trip suggestions provided in this guide will help you extend learning through additional conversations and real-world experiences.

How to Use the STEAM Approach to Education

STEAM is an approach to education that focuses on using Science, Technology, Engineering, Art, and Math to solve real-world problems. Empathy is at the core of STEAM education. Understanding how people, animals, or things are affected by a problem is an important part of the problem-solving and solution-seeking process. Teaching children how to think creatively prepares them for new unknown technologies, industries, and careers.

With STEAM activities and tasks, the final product is not as important as the process. Through the process of experimenting and exploring, your child is using creative and critical thinking skills. Scientists, mathematicians, engineers, and artists use the same critical thinking skills to find new and innovative solutions.

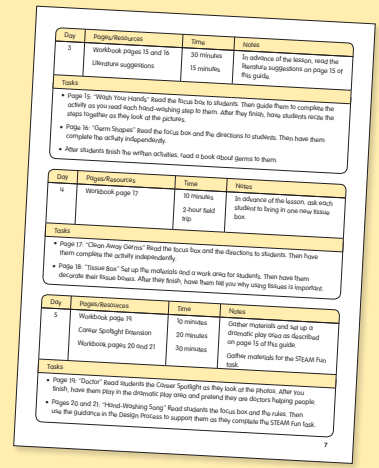




How to Use the Sample Pacing Plan and Template

The number of days you spend on each unit will depend on how you are using this resource. You may be using it to supplement your core curriculum or as part of a hybrid learning model.

The sample pacing plan is based on a 5-day lesson plan. Each day includes the *Skill Sharpeners: STEAM* workbook page numbers and suggested resources, the duration of the practice, relevant notes, and the tasks for that day. Refer to the sample plan to see examples of how and when to incorporate discussion questions, literature references, and field trips into your lesson plans.



Day	Pages/Resources	Time	Notes
3	Workbook pages 15 and 16 Literature suggestions	30 minutes 15 minutes	In advance of the lesson, read the literature suggestions on page 15 of this guide.

Tasks

- Page 15: "Wash Your Hands." Read the focus box to students. Then guide them to complete the activity as you read each hand-washing step to them. After they finish, have students recite the steps together as they look at the pictures.
- Page 16: "Germ Stoppers." Read the focus box and the directions to students. Then have them complete the activity independently.
- After students finish the written activities, read a book about germs to them.

Day	Pages/Resources	Time	Notes
4	Workbook page 17	10 minutes 2-hour field trip	In advance of the lesson, ask each student to bring in one new tissue box.

Tasks

- Page 17: "Clean Away Germs." Read the focus box and the directions to students. Then have them complete the activity independently.
- Page 18: "Tissue Box." Set up the materials and a work area for students. Then have them decorate their tissue boxes. After they finish, have them tell you why using tissues is important.

Day	Pages/Resources	Time	Notes
5	Workbook page 19 Career Spotlight Extension Workbook pages 20 and 21	10 minutes 20 minutes 30 minutes	Gather materials and set up a dramatic play area as described on page 15 of this guide. Gather materials for the STEAM Fun task.

Tasks

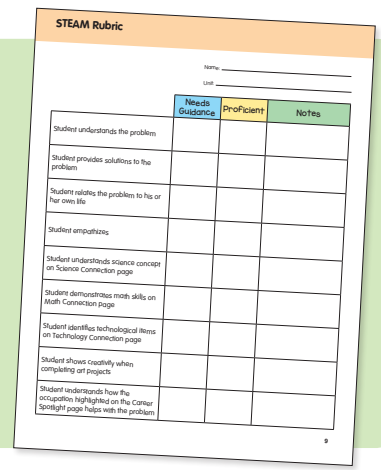
- Page 19: "Doctor." Read students the Career Spotlight as they look at the photos. After you finish, have them play in the dramatic play area and pretend they are doctors helping people.
- Pages 20 and 21: "Hand-Washing Song." Read students the focus box and the rules. Then use the guidance in the Design Process to support them as they complete the STEAM Fun task.

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How to Use the STEAM Rubric and the Graphic Organizers

The STEAM Rubric can be used to measure and summarize students' understandings and competencies after they complete each unit.

The graphic organizers are intended to be used for field trips and virtual field trips. They provide a structure for students to record information as well as their observations and feelings.



STEAM Rubric

Name: _____

Unit: _____

	Needs Guidance	Proficient	Notes
Student understands the problem			
Student provides solutions to the problem			
Student relates the problem to his or her own life			
Student empathizes			
Student understands science concept on Science Connection page			
Student demonstrates math skills on Math Connection page			
Student identifies technological items on Technology Connection page			
Student shows creativity when completing art projects			
Student understands how the occupation highlighted on the Career Spotlight page helps with the problem			

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How to Use the Discussion Questions

This guide includes discussion questions for each Learn About the Problem nonfiction text. The discussion questions are intended to help students connect the topic to their own lives and deepen their understanding of how a problem can affect people, animals, a community, or a whole city—a problem can even affect an entire region. After students read the Learn About the Problem text, engage them in discussion about the topic. Explain to students that there are no right answers, and encourage them to share their experiences and opinions.



When to Do the Career Spotlight Extensions

The Career Spotlight Extensions provide opportunities to engage students in authentic tasks related to careers. The Career Spotlight Extensions will provide the most value if they are completed after you read the Career Spotlight activity to students. Engaging in tasks that are similar to those they read about in the Career Spotlights will help students make connections between the topics and the real-world jobs related to them.

How to Use the Literature Suggestions

The literature suggestions in this guide focus on different aspects of a topic. You may choose to read the fiction and nonfiction books to students before beginning the unit, during the unit, or after the unit. Encourage students to think about how they would feel if they were the person in the story or they were experiencing the situation the story describes.

When to Do the Field Trips

The field trips may be most valuable after students complete the Connections activities and have read and completed the Career Spotlight.

The field trips and virtual field trips are intended to deepen students' understanding of the topic and extend their learning by having authentic or virtual experiences. As students participate in the field trips, encourage them to share their observations and ideas. At the end of the field trip, you may wish to have students share any solutions they come up with and have them think about how they can apply what they have experienced to their STEAM task.



Sample Pacing Plan

Unit: Germs

Day	Pages/Resources	Time	Notes
1	Workbook pages 8 and 9 Workbook pages 10 and 11 Discussion questions, page 15 of this guide	30 minutes	Preview discussion questions on page 15 of this guide before the lesson.

Tasks

- Page 8: "Feeling Sick" Guide students to preview the illustrations and make predictions about the story. The read the title and the story to students.
- Page 9: "Germs from the Park" Read the directions and the items to students and guide them through completing the activity.
- After students complete the activity, have them share their responses with the class.
- Pages 10 and 11: "Germs Make You Sick" Read the title to students and guide them through previewing the photos. Then read the text to students as they look at it in their workbooks.
- Use the discussion questions or some of your own questions to engage students in discussing the topic and sharing their thoughts, opinions, and experiences.

Day	Pages/Resources	Time	Notes
2	Workbook pages 12 and 13	40 minutes	Gather the materials for the art project.

Tasks

- Page 12: "Cover Your Mouth" Set up the materials and a work area for students. Then guide them through the steps to complete the project.
- After they finish, ask students to tell you what the art project shows and why it is important.

Day	Pages/Resources	Time	Notes
3	Workbook pages 15 and 16 Literature suggestions	30 minutes 15 minutes	In advance of the lesson, read the literature suggestions on page 15 of this guide.

Tasks

- Page 15: "Wash Your Hands" Read the focus box to students. Then guide them to complete the activity as you read each hand-washing step to them. After they finish, have students recite the steps together as they look at the pictures.
- Page 16: "Germ Shapes" Read the focus box and the directions to students. Then have them complete the activity independently.
- After students finish the written activities, read a book about germs to them.

Day	Pages/Resources	Time	Notes
4	Workbook page 17	10 minutes 2-hour field trip	In advance of the lesson, ask each student to bring in one new tissue box.

Tasks

- Page 17: "Clean Away Germs" Read the focus box and the directions to students. Then have them complete the activity independently.
- Page 18: "Tissue Box" Set up the materials and a work area for students. Then have them decorate their tissue boxes. After they finish, have them tell you why using tissues is important.

Day	Pages/Resources	Time	Notes
5	Workbook page 19 Career Spotlight Extension Workbook pages 20 and 21	10 minutes 20 minutes 30 minutes	Gather materials and set up a dramatic play area as described on page 15 of this guide. Gather materials for the STEAM Fun task.

Tasks

- Page 19: "Doctor" Read students the Career Spotlight as they look at the photos. After you finish, have them play in the dramatic play area and pretend they are doctors helping people.
- Pages 20 and 21: "Hand-Washing Song" Read students the focus box and the rules. Then use the guidance in the Design Process to support them as they complete the STEAM Fun task.

Pacing Template

Unit: _____

Day	Pages/Resources	Time	Notes

Tasks

Day	Pages/Resources	Time	Notes

Tasks

Day	Pages/Resources	Time	Notes

Tasks

STEAM Rubric

Name: _____

Unit: _____

	Needs Guidance	Proficient	Notes
Student understands the problem			
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Student demonstrates math skills on Math Connection page			
Student identifies technological items on Technology Connection page			
Student shows creativity when completing art projects			
Student understands how the occupation highlighted on the Career Spotlight page helps with the problem			

KWLF Graphic Organizer

Name: _____

Topic: _____

K What I know

W What I want to know

L What I learned

F How I feel

What I Saw, What I Think It Means Graphic Organizer

Name: _____



What I saw:



What I think it means:

Same and Different Graphic Organizer

Name: _____

Same

Different

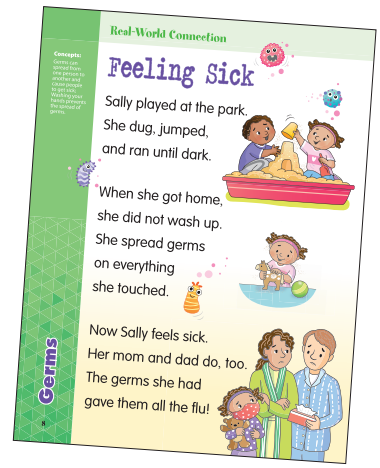
Why it's important:

Organization of Each Unit

Each unit in *Skill Sharpeners: STEAM* focuses on a real-world problem and features a realistic fiction text, a nonfiction text, an art project, and a variety of activities that focus on science, technology, engineering, and math. In addition, each unit includes a career connection that features real-world jobs. Following is a description of each component of the unit and the role it plays and its value for students.

Real-World Connection

Each unit begins with a Real-World Connection text that focuses on the topic through a one-page realistic fiction story. The story provides context for students to understand the problem and possibly empathize with the people or animals that this problem affects. The story often includes multiple problems connected to the topic.


Real-World Connection

Feeling Sick

Sally played at the park.
She dug, jumped,
and ran until dark.

When she got home,
she did not wash up.
She spread germs
on everything
she touched.

Now Sally feels sick.
Her mom and dad do, too.
The germs she had
gave them all the flu!

Germs

What's the Problem?

The What's the Problem? page follows the Real-World Connection story, and it focuses on having students identify one or more problems in the story. The items in this activity will help students think about the problem or problems that were presented and identify possible solutions from the story or from his or her own thoughts.


What's the Problem?

Germs from the Park

Answer the questions about the story you read.

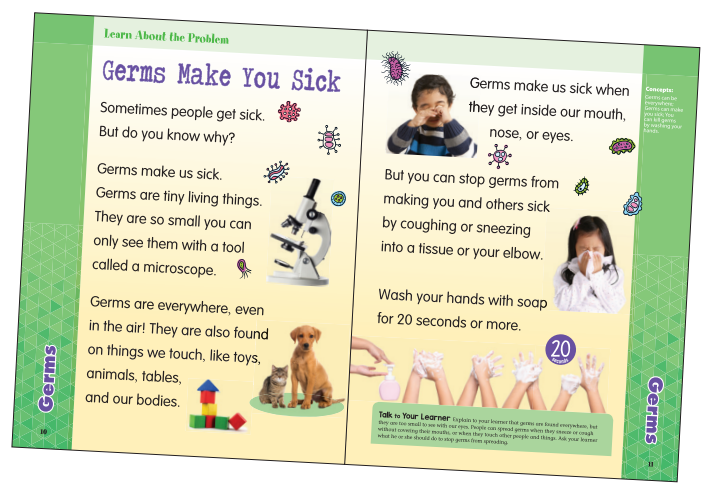
1. Fill in the circle under the picture that shows what Sally did after she played at the park.

2. Draw a picture of how Sally felt after she forgot to wash her hands.

Germs

Learn About the Problem

Each unit includes a nonfiction text that provides students with more detailed information about the problem in the real world. Meaningful photos and illustrations provide context and enrich students' understanding of the problem.


Learn About the Problem

Germs Make You Sick

Sometimes people get sick.
But do you know why?

Germs make us sick.
Germs are tiny living things.
They are so small you can
only see them with a tool
called a microscope.

Germs are everywhere, even
in the air! They are also found
on things we touch, like toys,
animals, tables,
and our bodies.

Germs make us sick when
they get inside our mouth,
nose, or eyes.

But you can stop germs from
making you and others sick
by coughing or sneezing
into a tissue or your elbow.

Wash your hands with soap
for 20 seconds or more.

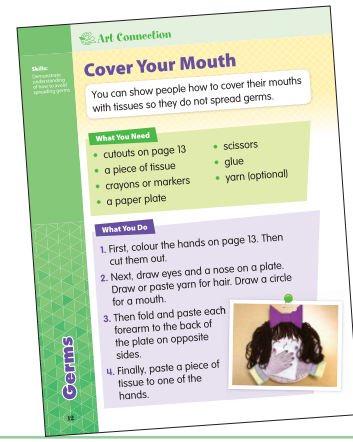
20

Talk to Your Learner

Germs

Art and Engineering Connections

Each unit includes an art connection and an engineering connection that incorporate creativity into finding solutions. These activities provide an opportunity to be creative and to learn about how to relate topics to art and engineering and to present information in an engaging way.



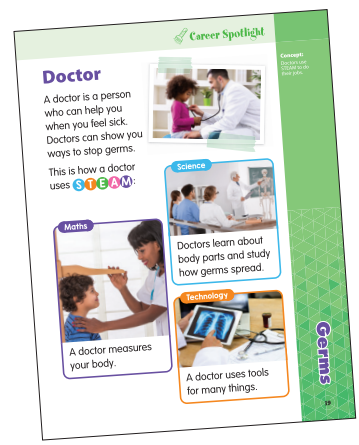
Science, Math, and Technology Connections

The science, math, and technology connections present additional information about how these emphases are used to solve problems. These activities provide practice with basic skills such as counting, writing letters and words, and demonstrating understanding through drawing.



Career Spotlight

The career spotlight activities present a variety of careers related to the problems or solutions in the unit. These activities provide students with a real-world view of science, technology, engineering, arts, and math jobs and careers.



STEAM Task

Each unit culminates with a STEAM task. The STEAM task gives students a real-world scenario and a problem to solve using the following design process: Ask, Imagine, Plan, Create, Improve. Support is provided for an adult to guide students through each step of the design process.



Discussion Questions

Discussion questions for "Germs Make You Sick," pages 10 and 11

After students read "Germs Make You Sick," use the following questions along with some of your own to encourage discussion to deepen students' understanding of the topic.



Where are germs found?

Have you ever had the flu? How did you feel when you were sick? How long did it take for you to feel better?

If you feel sick, do you think you should go to school? Why or why not?

What are some ways you can stop your germs from spreading?

Career Spotlight Extension

Set up a dramatic play area for students. Gather items such as masks, gloves, tongs or tweezers, stethoscopes, stuffed animals, a notepad, and crayons. Allow students to explore the items and role play how doctors help people who are sick.

Literature Suggestions

Consider reading students these stories about germs and how to stay healthy.

Germs Are Not for Sharing, written by Elizabeth Verdick

Sick Simon, written by Dan Krall

Germs vs. Soap, written by Didi Dragon and Hannah Robinett

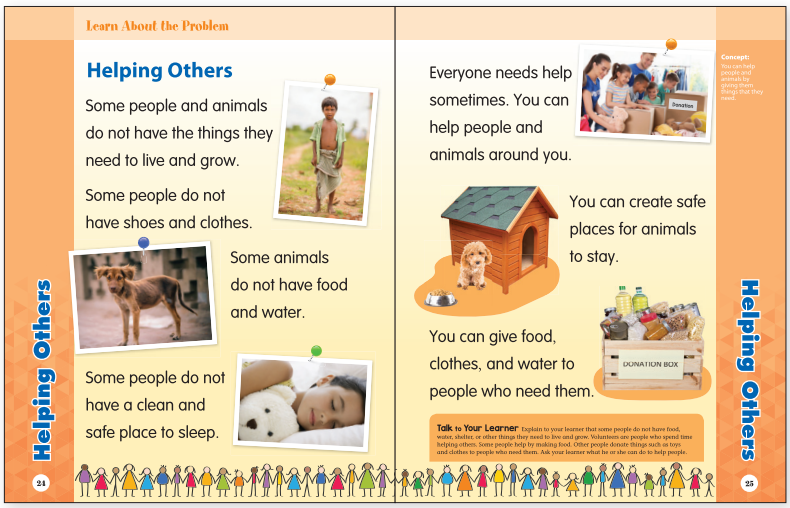
Wash Your Hands, written by Tony Ross



Discussion Questions

Discussion questions for "Helping Others," pages 24 and 25

After students read "Helping Others," use the following questions along with some of your own to encourage discussion to deepen students' understanding of the topic.



How do you help your family at home?

What do you need to live and grow? How would you feel if you did not have those things?

Why is it important to help others?

What is one way you can be helpful in your school?

If you have toys that you do not play with anymore, what can you do with them?

How can you help people in your community who do not have clean clothes to wear?

What can you do to help those in your community who do not have food to eat?

Career Spotlight Extension

Have students become volunteers at school. They can serve other classrooms lunch, help clean the cafeteria or library, water the plants, and pick up trash around the school.

Students can help the community by collecting canned foods for the hungry and needy. Donate the food collected to a local food bank or charity.

You can also set up a dramatic play area for students to role play helping at an animal shelter. Gather items such as stuffed animals, bowls, blankets, and balls. Allow students to explore the items and role play how to clean, feed, and play with animals at a shelter.



Field Trip Suggestions

If you live near a retirement home, you might consider organizing a field trip to visit it. While there, have students play games, make art projects, or read a picture book to the elderly.



If you do not live near a retirement home, have students cheer up seniors by making them a card. Prepare for this project by folding paper in half and writing an inspirational word or quote on the front of the card. Then distribute cards to students and have them decorate and draw pictures. Deliver the cards to a retirement home when completed.

Literature Suggestions

Consider reading students these stories about helping others.

Shelter, written by Céline Claire

Last Stop on Market Street, written by Matt de la Peña

Can We Help? Kids Volunteering to Help Their Communities, written by George Ancona

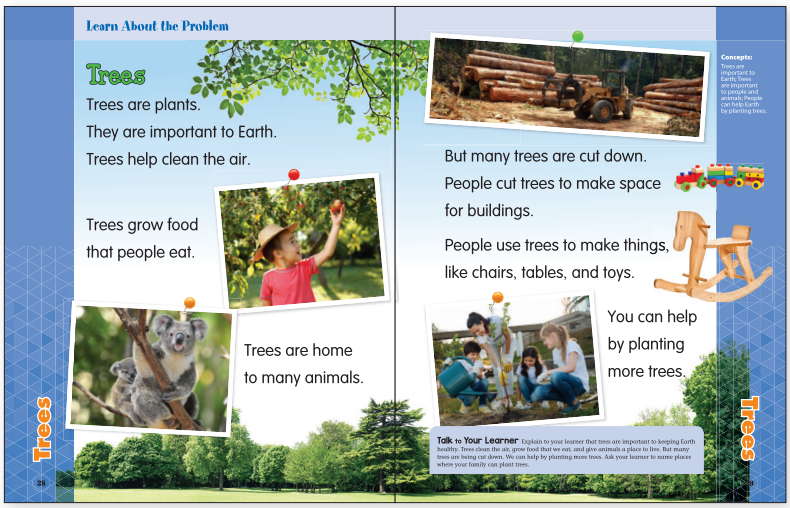
Look Where We Live! written by Scot Ritchie

The Last Chip, written by Duncan Beedie

Discussion Questions

Discussion questions for "Trees," pages 38 and 39

After students read "Trees," use the following questions along with some of your own to encourage discussion to deepen students' understanding of the topic.



Why are trees important to people?

What are some foods people eat that grow on trees?

How do trees help animals?

What are some things that are made from trees?

What do you think would happen to the air if there were no more trees on Earth?

If there were no more trees on Earth, what would happen to the animals that need trees for shelter and food?

Why should you plant trees in your neighborhood?

Career Spotlight Extension

Set up a dramatic play area for students. Gather gardening items such as gardening gloves, small garden tools (gardening fork, garden trowel, hand rake) a watering can, fruits, vegetables, plants, and a tub or sensory table filled with dirt. Allow students to explore the items and role play how gardeners help plants, trees, and fruits and vegetables grow.



Field Trip Suggestions

If you live near a forest, you might consider organizing a field trip to visit it. While there, have students record insects and other animals they see. Have them think about the ways the trees help animals live and grow.

If you do not live near a forest, consider taking a virtual trip to one. Have students take notes about the animals they see and how trees help them survive.

Literature Suggestions

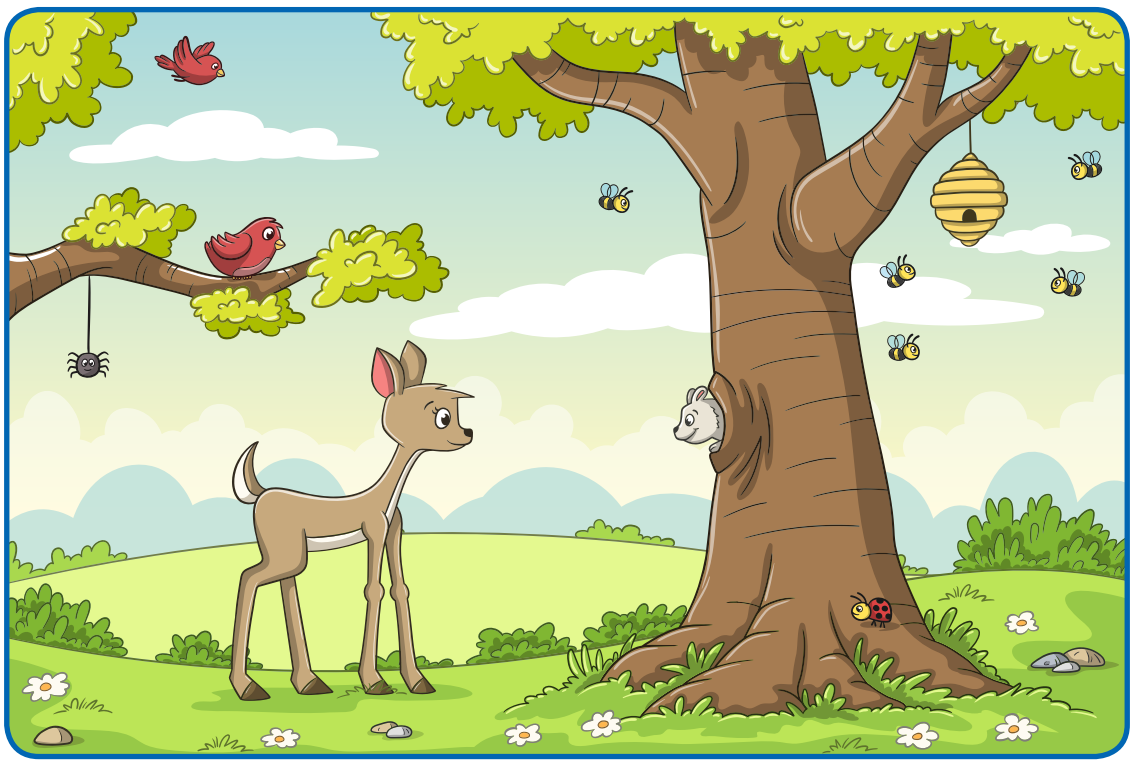
Consider reading students these stories about trees.

The Boy Who Grew a Forest, written by Sophia Gholz

A Tree Is Nice, written by Janice May Udry

Happy Little Pine, written by Nirdesha Munasinghe

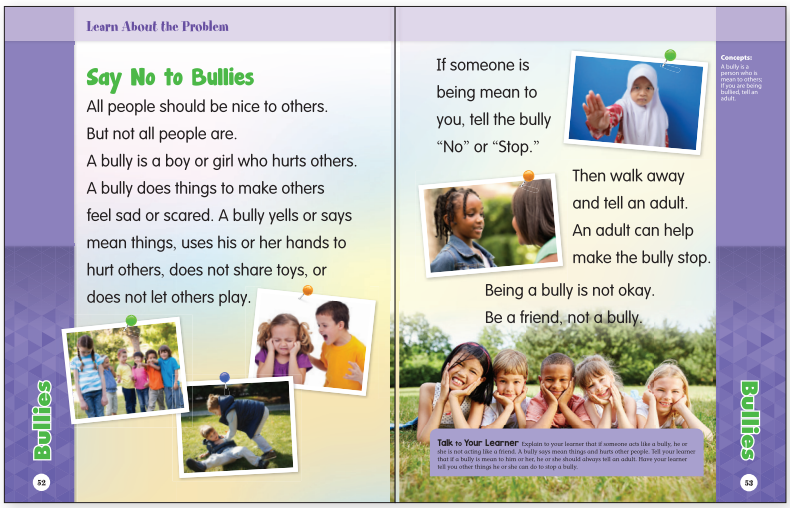
The Tree Lady: The True Story of How One Tree-Loving Woman Changed a City Forever, written by H. Joseph Hopkins



Discussion Questions

Discussion questions for "Say No to Bullies," pages 52 and 53

After students read "Say No to Bullies," use the following questions along with some of your own to encourage discussion to deepen students' understanding of the topic.



Why is it important to be nice to others?

What are some things bullies do to others?

Have you ever been bullied or seen someone be bullied? How did it make you feel?

What can you do if someone is being a bully towards you?

What are some things you can do if you feel like being mean to others?

Literature Suggestions

Consider reading students these stories about how to be a friend, not a bully.

Stick and Stone, written by Beth Ferry

The Recess Queen, written by Alexis O'Neill and Laura Huliska-Beith

The Juice Box Bully, written by Bob Sornson and Maria Dismondy

Chrysanthemum, written by Kevin Henkes

I Walk with Vanessa, written by Kerascoët





Discussion Questions

Discussion questions for "Too Much Sun," pages 66 and 67

After students read "Too Much Sun," use the following questions along with some of your own to encourage discussion to deepen students' understanding of the topic.



How does the sun help people, animals, and plants?

What are some ways the sun can hurt you?

What can you wear to stay safe while playing in the sun?

If you are hot outside in the sun, where can you sit to keep cool?

Literature Suggestions

Consider reading students these stories about the sun.

George the Sun Safe Superstar, written by Kathryn Clifford and Chantal Renn

Sun! One in a Billion, written by Stacy McAnulty

Sun up, Sun down, written by Gail Gibbons

The Sun Is My Favorite Star, written by Frank Asch

The Sun, written by Thomas K. Adamson



Discussion Questions

Discussion questions for "Bees Help Us," pages 80 and 81

After students read "Bees Help Us," use the following questions along with some of your own to encourage discussion to deepen students' understanding of the topic.



Why are bees important to people and Earth?

What are some foods you like to eat that bees help make?

Why do bees need a safe place to live?

How can you help save the bees?

Career Spotlight Extension

Set up a dramatic play area for students. You'll need several egg cartons (to act as honeycombs), yellow pompoms (to act as honey), a cardboard box or a file box to fit the egg cartons, a teapot or watering can to act as a "smoker," a large hat with netting glued around the rim, a spatula or tweezers, gloves, and a bucket. Allow students to explore the items and role play how beekeepers harvest honey.



Field Trip Suggestion

Consider taking a virtual trip to a bee farm. Have students draw pictures of ways bees help people and plants and important tools beekeepers use.

Literature Suggestions

Consider reading students these stories about bees.

Are You a Bee? written by Judy Allen

Bee & Me, written by Alison Jay

The Honeybee, written by Kirsten Hall

Give Bees a Chance, written by Bethany Barton

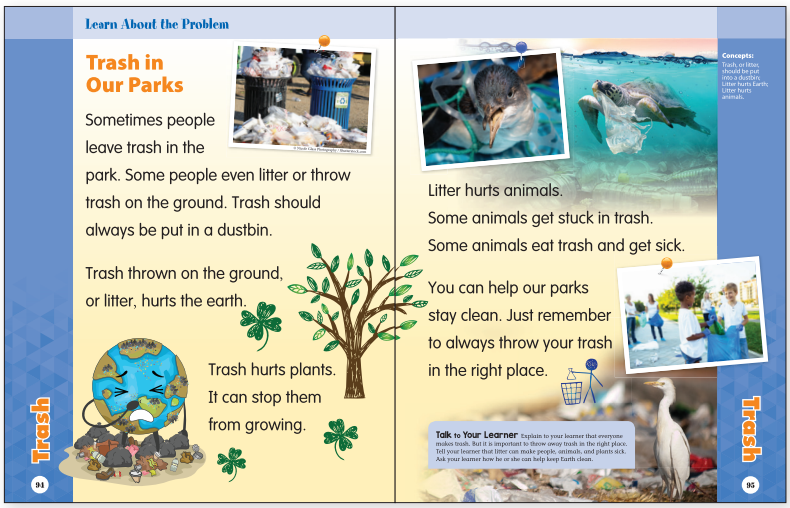
Save the Bees, written by Bethany Stahl



Discussion Questions

Discussion questions for "Trash in Our Parks," pages 94 and 95

After students read "Trash in Our Parks," use the following questions along with some of your own to encourage discussion to deepen students' understanding of the topic.



What can you do if you have trash, but there isn't a place to throw it away?

Is there a park near where you live? If yes, have you ever seen trash in the park? What kinds of trash did you see?

What would you do if you were at the park with friends and one of your friends threw trash on the ground?

Should all the people in a community care about trash in the park? Why or why not?

Field Trip Suggestions

If you live near a park, you might consider organizing a field trip to visit it. While there, have students record natural materials they see at the park, as well as human-made materials such as trash.

If you do not live near a park, consider taking a virtual trip to one. Have students compare the park in the virtual tour to the park in the story "Trash in Our Parks" on pages 94 and 95.

Literature Suggestions

Consider reading students these stories about trash.

Here Comes the Garbage Barge! written by Jonah Winter

What a Waste, written by Jess French

Look Out for Litter, written by Lisa Bullard

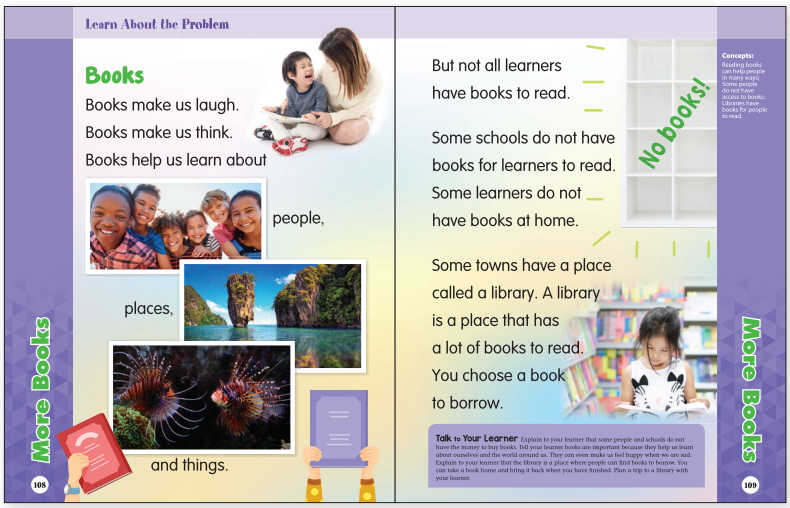
What If Everybody Did That? written by Ellen Jabernick



Discussion Questions

Discussion questions for "Books," pages 108 and 109

After students read "Books," use the following questions along with some of your own to encourage discussion to deepen students' understanding of the topic.



Do you think all schools should have books for students to read? Why or why not?

Do you think books help you learn? Why or why not?

What can you do if your school does not have books for students to read?

Field Trip Suggestions

If you live near a library, you might consider organizing a field trip to visit it. While there, have students go on a treasure hunt to find different things, such as books that start with a specific letter, computers, DVDs, the checkout desk, and the help desk.

If you do not live near a library, consider taking a virtual trip to one. Have students point out important areas of the library, such as the reading area, the computer area, and the checkout desk.



Discussion Questions

Discussion questions for "Show Your Body You Care," pages 122 and 123

After students read "Show Your Body You Care," use the following questions along with some of your own to encourage discussion to deepen students' understanding of the topic.



What are your favorite foods to eat?

What do you think will happen if you eat too many sweets?

What foods help give people energy to learn and play?

Which drink will help you grow, soda or milk? Why?

Career Spotlight Extension

Set up a dramatic play area for students to practice cooking and shopping for healthy foods. Gather plastic fruits and vegetables, baskets or brown paper bags, fake money, pots and pans, plates, utensils, and any other items you have for this activity.

You can also have students make their own healthy snack. Follow this recipe for Bugs on a Log:

Ingredients: celery sticks; cream cheese, hummus, or peanut butter; raisins or blueberries

Directions: Have students spread the cream cheese, hummus, or peanut butter on a celery stick. Then have students top their sticks with raisins or blueberries. Eat and enjoy!



Field Trip Suggestions

If you live near a farm, you might consider organizing a field trip to visit it. While there, have students draw pictures of fruits and vegetables that are growing and tell how each fruit and vegetable helps you grow (carrots can help with eyesight, apples help your heart stay healthy).

If you do not live near a farm, consider taking a virtual trip to one. Have students draw pictures of different crops that are being grown and harvested.

Literature Suggestions

Consider reading students these stories about healthy choices.

I Will Never Not Ever Eat a Tomato, written by Lauren Child

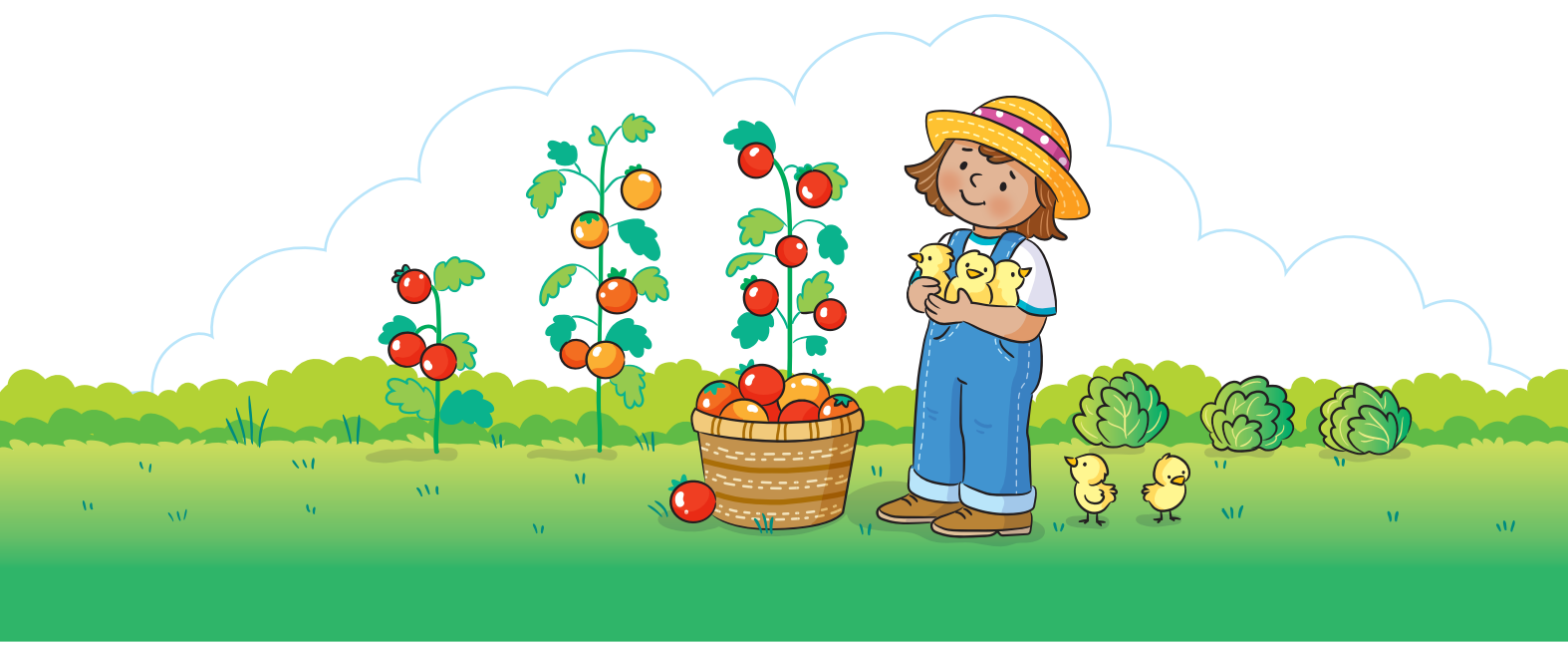
How Did That Get in My Lunchbox: The Story of Food, written by Chris Butterworth

Good Enough to Eat: A Kid's Guide to Food and Nutrition, written by Lizzy Rockwell

Cami Kangaroo Has Too Many Sweets, written by Stacy C. Bauer

The Sugar Story, written by Emelie Kamp

Gregory, the Terrible Eater, written by Mitchell Sharmat





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